

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (currently amended) A semiconductor current detector of improved noise immunity for detecting or measuring an electric current, comprising:

(a) a semiconductor substrate having a Hall-effect device formed therein from one surface thereof, the Hall-effect device having a plurality of semiconductor regions including a primary working region for generating a Hall voltage proportional to the magnitude of a current to be detected or measured;

(b) insulating means formed on said one surface of the semiconductor substrate;

(c) a shielding layer formed ~~in~~ on the insulating means for shielding the Hall-effect device from external disturbances; and

(d) a conductor strip disposed on the shielding layer ~~formed in the insulating means~~ so as to extend around at least part of the primary working region of the Hall-effect device, for carrying ~~at least a prescribed fraction of the current to be detected or measured,~~ the conductor strip being insulated from the shielding layer translated into the Hall voltage by the Hall-effect device.

2. (original) The semiconductor current detector of claim 1 wherein the conductor strip surrounds at least about three quarters of the primary working region of the Hall-effect device.

3. (original) A semiconductor detector of improved noise immunity for detecting or measuring an electric current, comprising:

(a) a semiconductor substrate having a Hall-effect device formed therein from one surface thereof, the Hall-effect device having a plurality of semiconductor regions including a primary working region for generating a voltage proportional to the magnitude of a current to be detected or measured;

(b) a first insulating layer formed on said one surface or the semiconductor substrate so as to cover the Hall-effect device;

(c) a plurality of electrodes formed on the first insulating layer and electrically connected respectively to some of the semiconductor regions of the Hall-effect device through windows in the first insulating layer;

(d) a plurality of conductor strips formed on the first insulating layer and electrically connected respectively to the electrodes;

(e) a second insulating layer formed on the first insulating layer and covering the electrodes and the conductor strips;

(f) a shielding layer formed on part of the second insulating layer so as to cover at least part of the primary working region of the Hall-effect device;

(g) a third layer formed on the second insulating layer and covering the shielding layer; and

(h) a conductor strip formed on the third insulating layer so as to extend around at least part of the primary working region of the Hall-effect device, for carrying at least a prescribed fraction of the current to be detected or measured.

4. (original) The semiconductor current detector of claim 3 further comprising:

(a) a fourth insulating layer formed on the third insulating layer and covering the conductor strip; and

(b) a second shielding layer formed on the fourth insulating layer so as to cover at least part of the primary working region of the Hall-effect device.

5. (original) The semiconductor current detector of claim 3 further comprising a magnetic collector formed on the third insulating layer.

6. (original) A semiconductor current detector of improved noise immunity for detecting or measuring an electric current, comprising:

(a) a semiconductor substrate having a Hall-effect device formed therein from one surface thereof, the Hall-effect device having plurality of semiconductor regions including a primary working region for generating a voltage proportional to the magnitude of a current to be detected or measured;

(b) a first insulating layer formed on said one surface of the semiconductor substrate so as to cover the Hall-effect device;

(c) a plurality of electrodes formed on the first insulating layer and electrically respectively to some of the semiconductor regions of the Hall-effect device through windows in the first insulating layer;

(d) a plurality of conductor strips formed on the first insulating layer and electrically connected respectively to the electrodes;

(e) a second insulating layer formed on the first insulating layer and covering the electrodes and the conductor strips;

(f) a conductor strip formed on the second insulating layer so as to extend around at least part of the primary working region of the Hall-effect device, for carrying at least a prescribed fraction of the current to be detected or measured;

(g) a third insulating layer formed on the second insulating layer and covering the conductor strip; and

(h) a shielding layer formed on the third insulating layer so as to cover at least part of the primary working part of the Hall-effect device.

7. (original) The semiconductor current detector of claim 6 further comprising a magnetic collector formed on the shielding layer.